

Review p 378 #2, 4, 5

p 379 #6, 7, 8, 9, 10, 11, 12

p 380 #1, 2, 3, 4, 5, 6

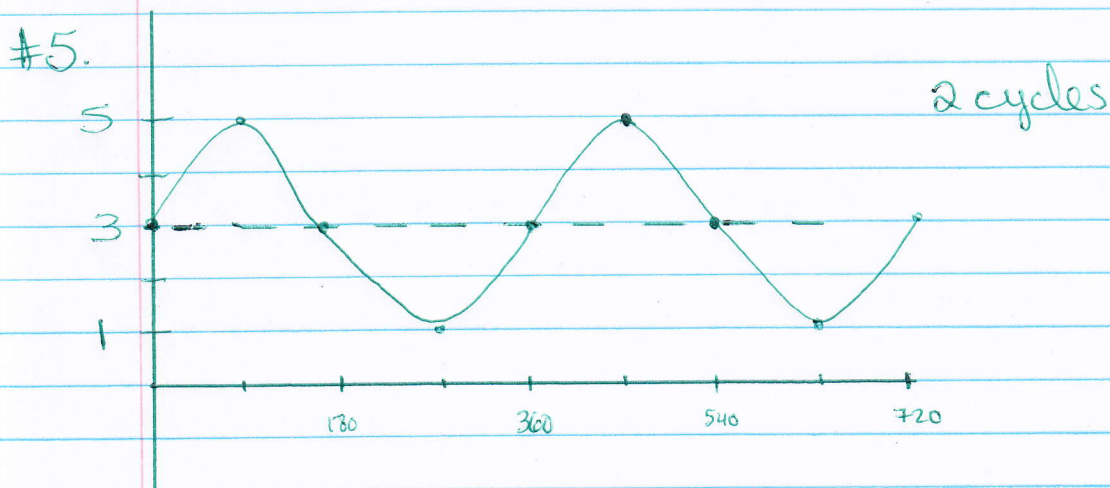
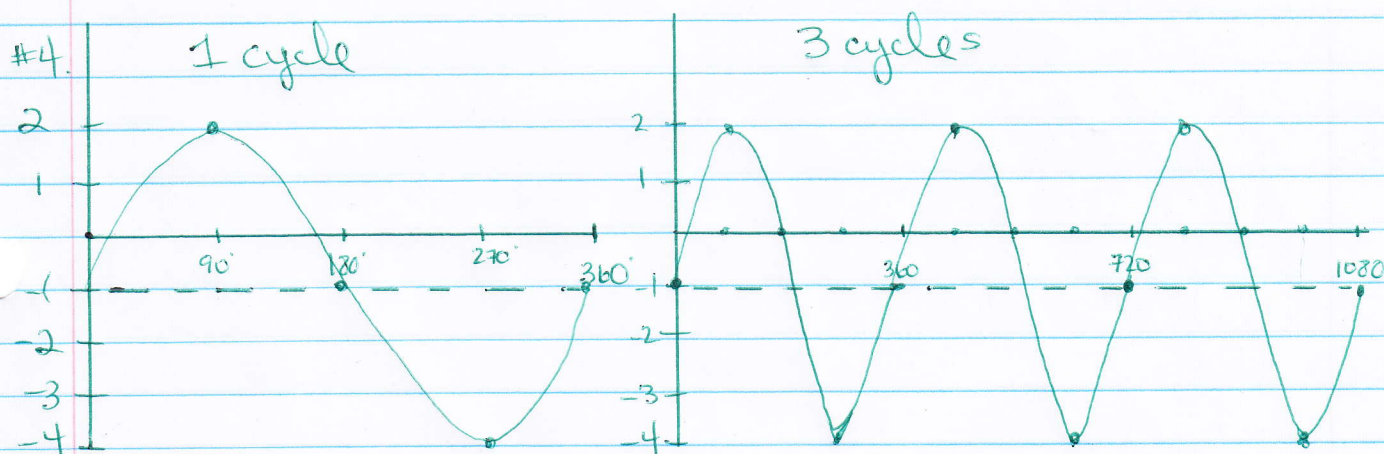
378 #2a) Periodic

b) 0.5 seconds

c) 3 cm

d) 1.5 seconds

e) The horizontal line would be longer.



p371 #6a) Red Range $d = \{d \mid -0.5 \leq d \leq 0.5, d \in \mathbb{R}\}$

Blue Range $d = \{d \mid -1.5 \leq d \leq 1.5, d \in \mathbb{R}\}$

b) Red Period — 0.025 secs $\rightsquigarrow \left\{ \frac{0.02}{4} \right\} = 0.005$ each tick
Blue Period — 0.02 secs

The blue engine is idling and vibrating faster than the red.

c)

Red equation of the axis $f(x) = 0$ } both at rest

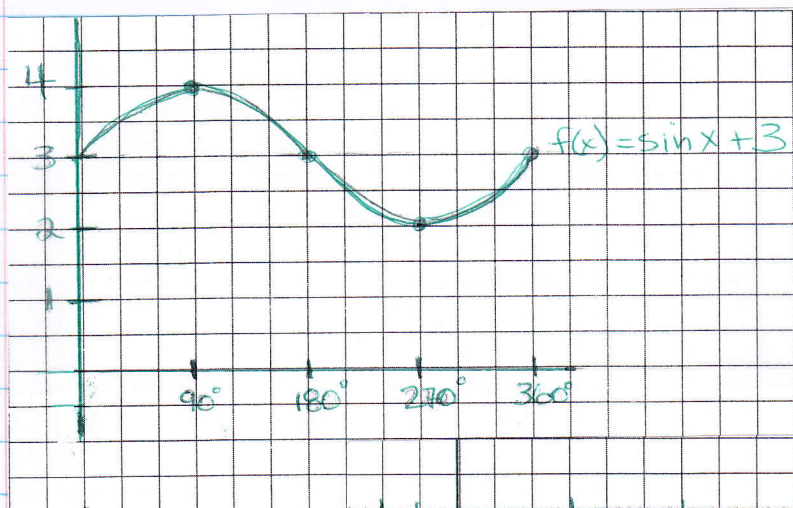
Blue equation of the axis $f(x) = 0$ }

d) Red Amplitude is 1.5 mm } how much they shake left
Blue Amplitude is 0.5 mm } and right.

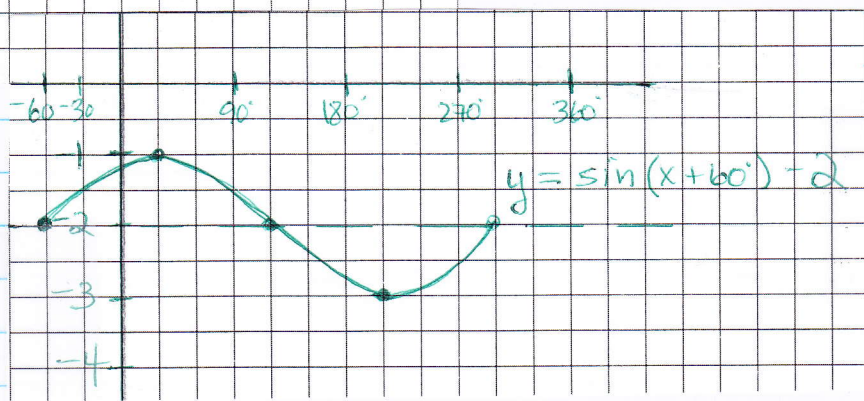
	Amplitude	period	equation	max/min value
#7 a) $f(x) = \sin x + 3$	1	360°	$f(x) = 3$	max 4 min 2
b) $f(x) = \sin(x + 60^\circ) - 2$	1	360°	$f(x) = -2$	max = -1 min = -3

#8

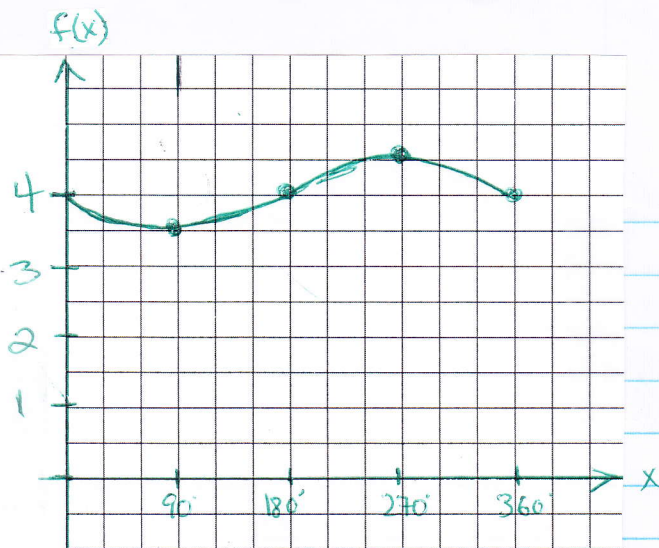
a)



b)



9a) $f(x) = -0.5 \sin x + 4$

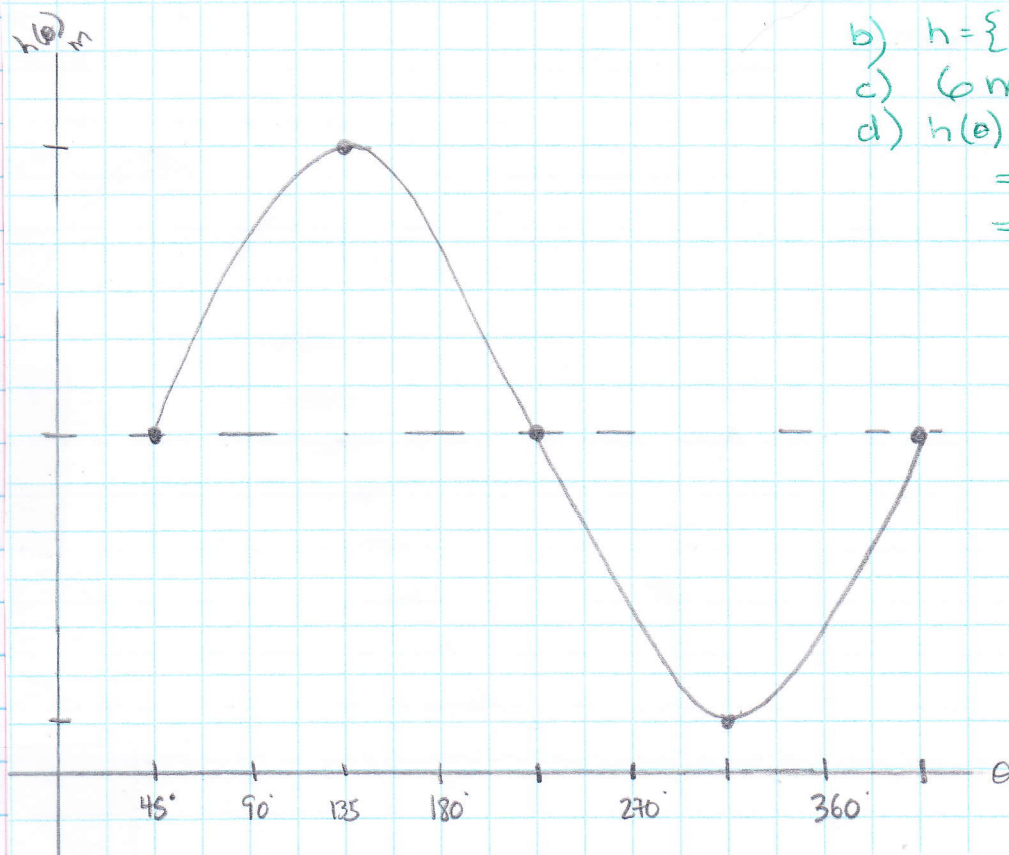


10.

	Amplitude	period	equation	max	min
a) $f(x) = 3 \sin x$	3	360°	$f(x) = 0$	3	-3
b) $f(x) = -2 \sin x$	2	360°	$f(x) = 0$	2	-2
c) $f(x) = 4 \sin x + 6$	4	360°	$f(x) = 6$	10	2
d) $f(x) = -0.25 \sin x$	0.25	360°	$f(x) = 0$	0.25	-0.25
e) $f(x) = 3 \sin(x + 45^\circ)$	3	360°	$f(x) = 0$	3	-3

#11 On graph paper - next page

#12.

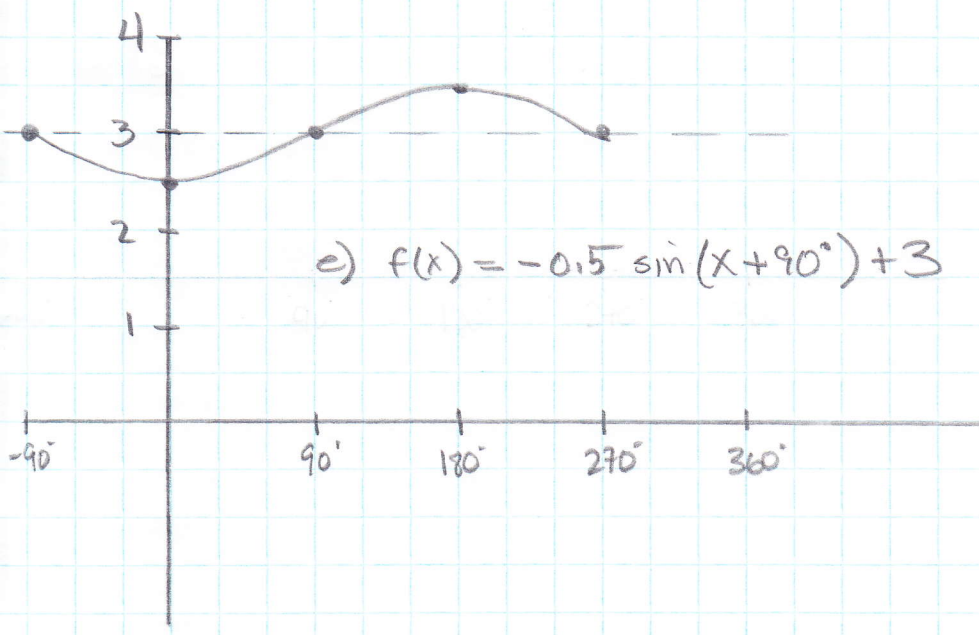
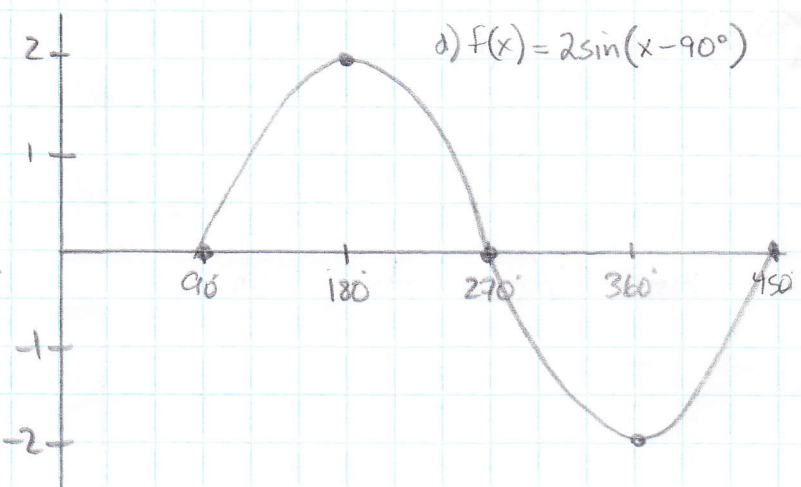
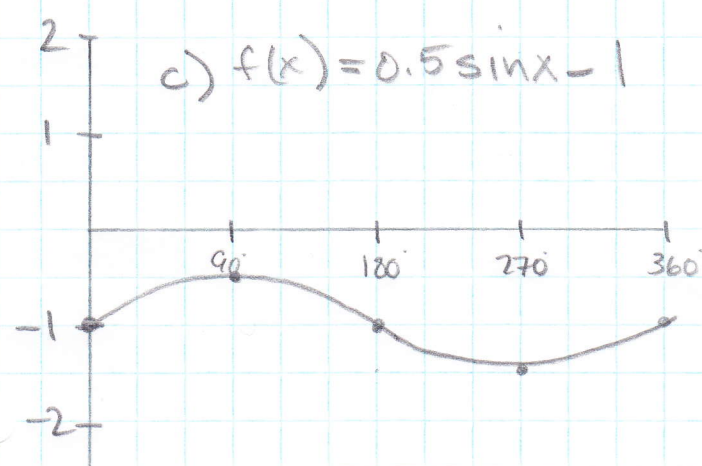
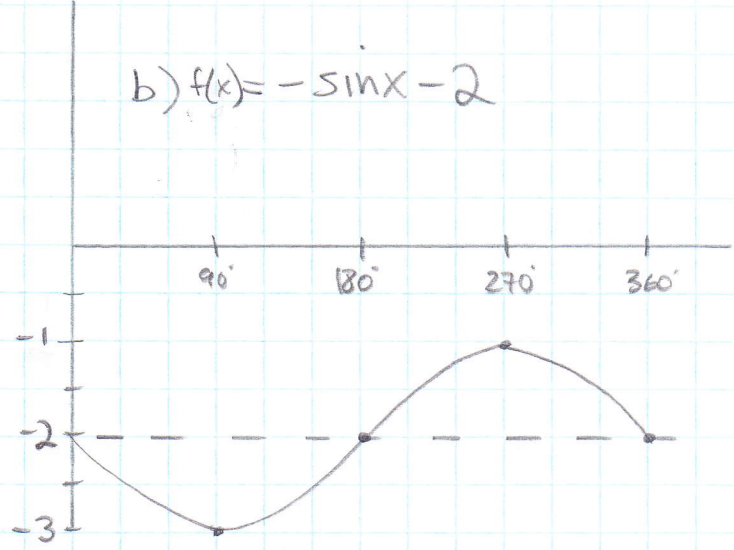
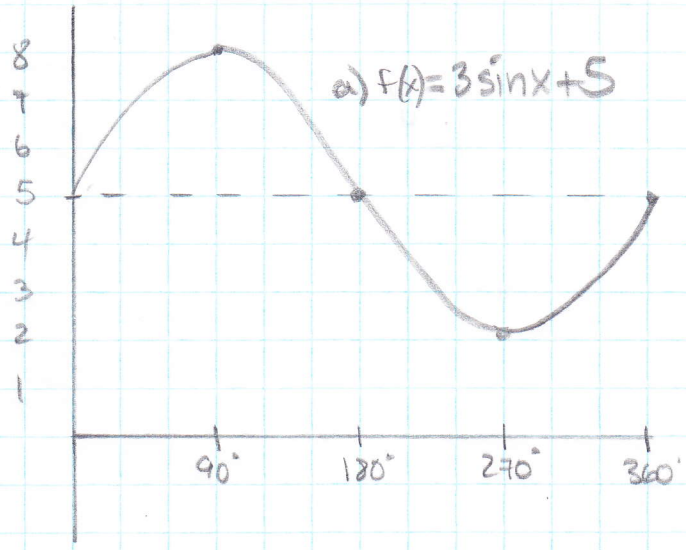


b) $h = \{h \mid 1 \leq h \leq 13, h \in \mathbb{Z}\}$

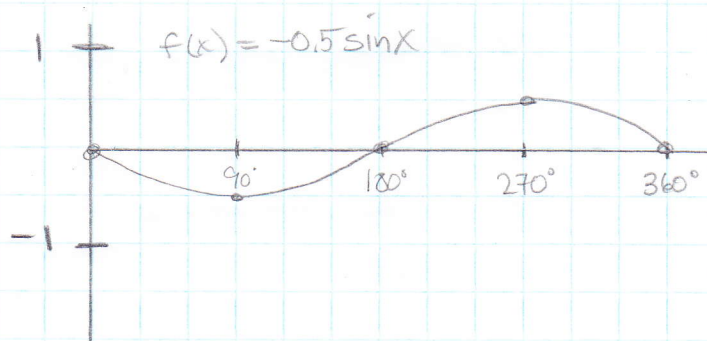
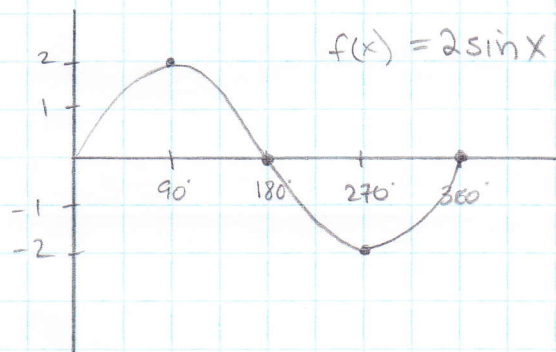
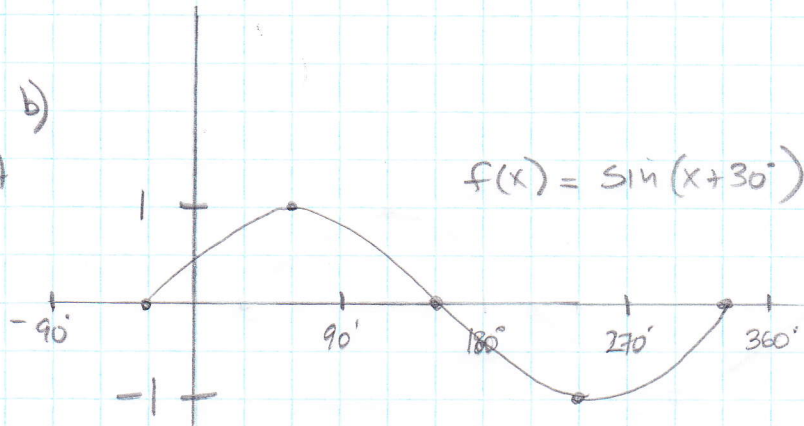
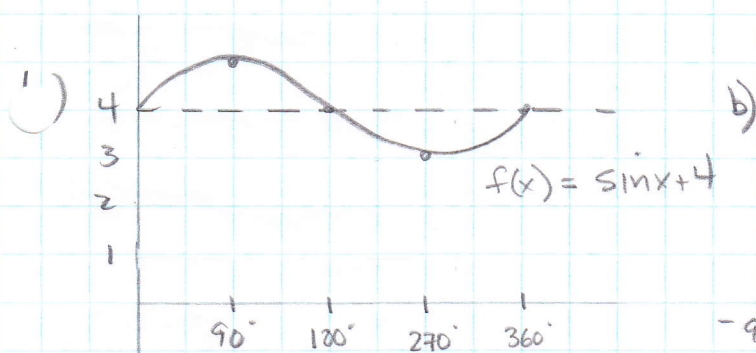
c) 6 m

d) $h(\theta) = 6 \sin(\theta - 45^\circ) + 7$
 $= 6 \sin(400^\circ - 45^\circ) + 7$
 $= 6.5 \text{ m}$

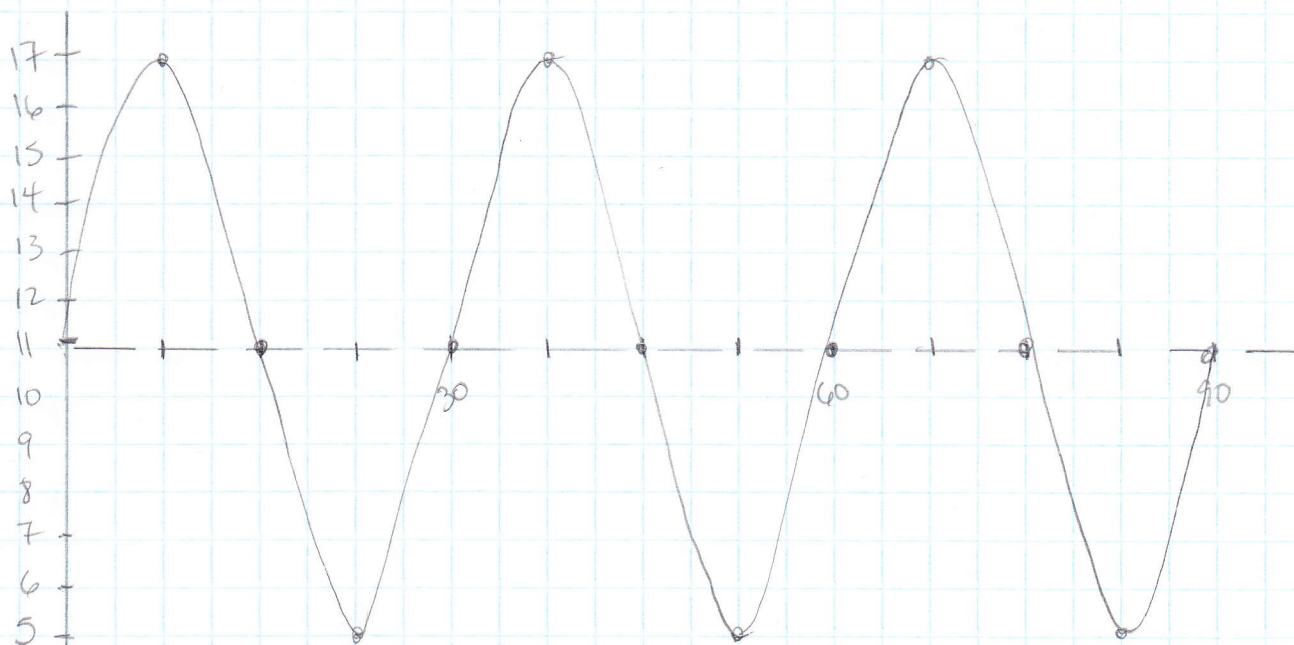
11.



p 380 #1,2,3,4,5,6



2.



3 a)

Red
Blue

Period

EQUATION

Amplitude

60 min
60 min

$f(x) = 18$
 $f(x) = 27$

9
18

time it take
for the minute
hand to go
all the way
around.

How far the
center of clock
is away from
ceiling.

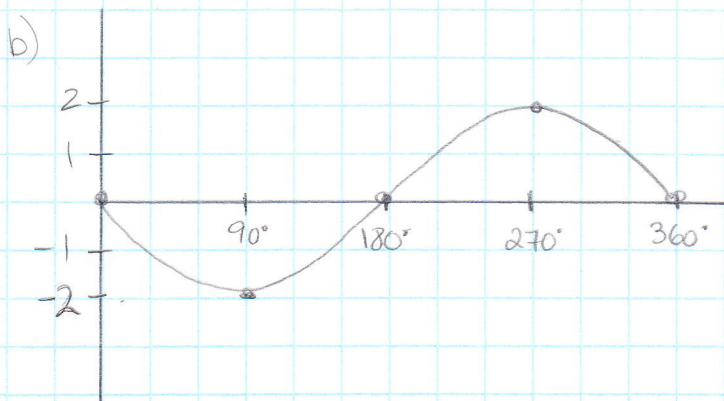
length of minute hands

b) painting at the 12 (closest to the ceiling)

c) $y = \{y \mid 9 \leq y \leq 27, y \in \mathbb{R}\}$ Red
 $y = \{y \mid 9 \leq y \leq 45, y \in \mathbb{R}\}$ Blue

d) Red = 22.5 cm
Blue = 36 cm

4 a) $f(x) = -2 \sin x$



c) Amplitude 2

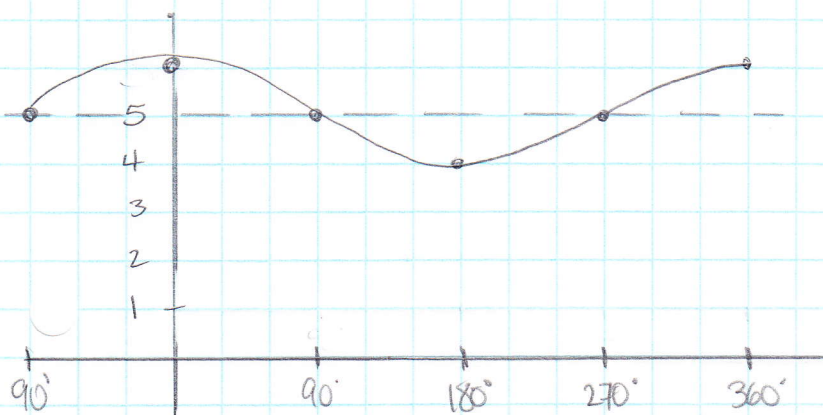
Equation of axis $f(x) = 0$

Period 360°

$x = \{x \mid 0 \leq x \leq 360^\circ, x \in \mathbb{R}\}$

$y = \{y \mid -2 \leq y \leq 2, y \in \mathbb{R}\}$

5. $f(x) = \sin(x + 90^\circ) + 5$



6 a) $f(x) = 4 \sin x$ Red

b) $f(x) = -5 \sin x + 2$ Green

c) $f(x) = -2 \sin x - 1$ Blue

d) $f(x) = 3 \sin x + 4$ Black